



Unique Identification (UID) Parts Marking Report

Why Mark Using UID?

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DoD Vision for Item Marking

To implement a policy establishing a strategic imperative for uniquely identifying tangible items relying to the maximum extent practical on international standards and commercial item markings and while not imposing unique government data requirements.

Uniquely identified (UID) tangible items will facilitate item tracking in DoD business systems and provide reliable and accurate data for management, financial, accountability and asset management purposes.

Unique IDentification (UID) is....

UID is . . .

. . . the set of data for tangible assets that is globally unique and unambiguous, ensures data integrity and data quality throughout life, and supports multi-faceted business applications and

EID

370521



Original Part Number

1234



Serial Number

786950



Defining the Scope of UID

A UID Is	A UID Is Not
<ul style="list-style-type: none">✓ A Data Element✓ A Unique Identifier for an Item✓ Globally Unique✓ Unambiguous✓ Permanent✓ Created by Concatenating Specific Data Elements✓ The enabler for business intelligence	<ul style="list-style-type: none">✓ A Device for Communicating Data, such as Radio Frequency Identification (RFID) Tags, Contact Memory Buttons, Linear Bar Codes, or 2-D Data Matrices✓ A Replacement for the National Stock Number✓ Intelligent Data that Yields Information About the Item

UID Constructs

The components that make up the UID are identified in the table below. Each enterprise has two options for creating the UID.

	UID Construct #1	UID Construct #2
Based on current enterprise configurations	If items are serialized within the Enterprise	If items are serialized within Part Number
UID is derived by concatenating the data elements IN ORDER:	Issuing Agency Code* Enterprise ID Serial Number	Issuing Agency Code* Enterprise ID Original Part Number Serial Number
Data Identified on Assets Not Part of the UID (Separate Identifier)	Current Part Number	Current Part Number

*The Issuing Agency Code (IAC) represents the registration authority that issued the enterprise identifier (e.g., Dun and Bradstreet, EAN.UCC). The IAC can be derived from the data qualifier for the enterprise identifier.



UID Equivalent Candidates

Global Individual Asset Identifier (GIAI) (Application Identifier: 8004) - composed of an EAN.UCC Company Prefix and an Individual Asset Reference. The holder of the EAN.UCC Company Prefix determines the structure and numbering of the Individual Asset Reference.

Global Returnable Asset Identifier (GRAI) (Application Identifier: 8003) - composed of a mandatory GRAI and an optional serial number. The GRAI consists of an EAN.UCC Company Prefix and a unique number, the Asset Type, which must be assigned for each type of asset being identified. The owner of the asset assigns the optional serial number. It denotes an Individual Asset within a given Asset Type.

Vehicle Identification Number (VIN), ISO STD 3779 (Data Identifier: I) - divided in four sections:

- (1) The first three characters uniquely identify the manufacturer, make and type of vehicle.
- (2) The second section consists of five characters and identifies the attributes of the vehicle.
- (3) The third section consists a one character check digit.
- (4) The fourth section consists of eight characters on positions 10-17 of the VIN. The first character represents the vehicle model year, the second character represents the plant of manufacture. The third through eighth characters are a sequential production number.

HIBCC Non-pharmaceutical health-care products (Application Identifier: 22) - The HIBCC's four components that ensure uniqueness: a four-position HIBCC manufacturer's identifier; the manufacturer's product identifier; a package or unit-of-measure indicator; and a check digit.

COMMON LANGUAGE® Equipment Identification (CLEI) (Data Identifier: 11P) - an intelligent, 10-character code used in inventory management and provisioning. There is also a 1:1 relationship between a CLEI code and a vendor's product identification. The latter defines the manufacturer, part number and manufacturing version of a given part number.



UID Equivalents

UID Equivalent	Construct #1 EID + Ser. No.	Construct #2 EID + Part No. + Ser. No.	Format	Data Qualifier
GIAI	<GIAI>		n4+an...30=34	AI: 8004
GRAI	<GRAI>		n4+n14+an...16=34	AI: 8003
VIN	<VIN>		an17	DI: I
HIBCC		<HIBCC>	+ <SN>	n2+an...29=31 + <SN> AI: 22
CLEI		<EID> + <CLEI> + <SN>	<EID> + an10 + <SN>	DI: 11P

UID equivalent

Not UID equivalent Note: The additional data elements in **blue** are required to construct the UID

Additional Data Elements

Issue: What is the optimal way to treat, lot, batch, and model numbers?

- ❑ Do these elements create a requirement for new constructs?
- ❑ The current rule 29 recommends concatenating lot and batch with serial to create a unique serial number. Once data elements are changed, how can they be traced?
- ❑ How often does uniqueness rely on these numbers?
 - For example, serial number is only unique within lot or batch
 - Are there 4 levels of sorting (I.e., enterprise, model, part, serial)

Resolution:

- ✓ Lot, batch: will create a variant to Construct #2 ("2A"). Simultaneously pursue industry shift away from this variant. Need to be able to identify in UID Type. UID office needs to talk to JOCG. Need qualifiers established for 2A. Mark R. will write up application for DI for serialization within lot or batch.
- ✓ Model: Issue: If there is a model number and not a part number, and the item is uniquely serialized within the model number, what do we do? No new rule needs to be added. There is a legacy question on the table.

UID Collaborative Solution Issue

- Using the **syntax** of ISO/IEC 15434, the collaborative solution provides for three interoperable formats:

TEI:

[>^R_Sxx^G_SEUC370521^G_SPNO1234^G_SSEQ786950^E_OT

(Format has to be assigned by SC 31, all 2-digit numbers used or reserved)

EAN.UCC: Application Identifiers

[>^R_S05^G_S776370521^G_S011234^G_S21786950^E_OT

MH 10.8.2: Data Identifiers


[>^R_S06^G_S3V370521^G_S1P1234^G_SS786950^E_OT



- Without collaborative solution, aviation equipment would be marked:

EID	370521		
Original Part Number	1234		
Serial Number	786950		

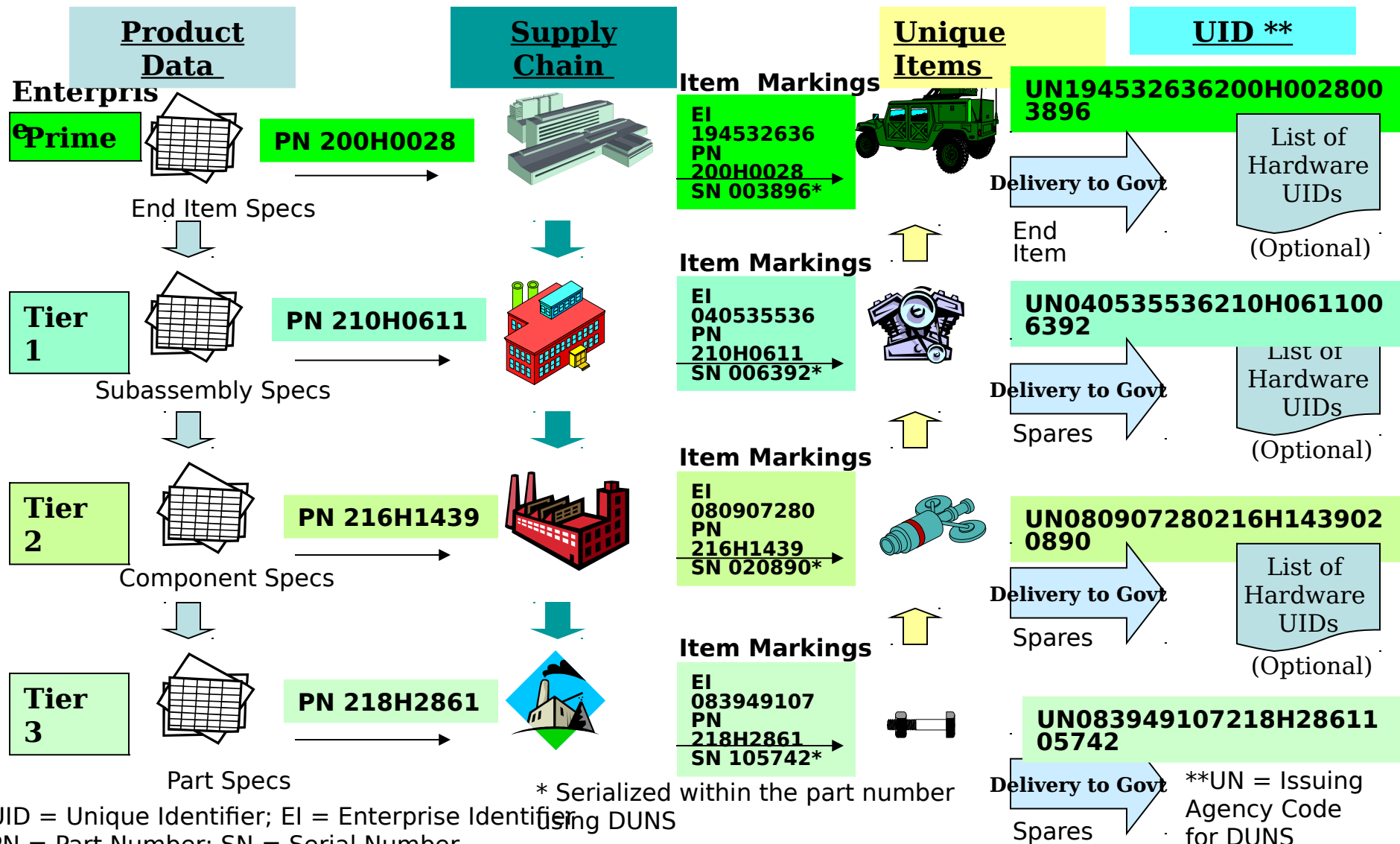
- With collaborative solution, aviation equipment would be marked:

EID	370521	
Original Part Number	1234	
Serial Number	786950	

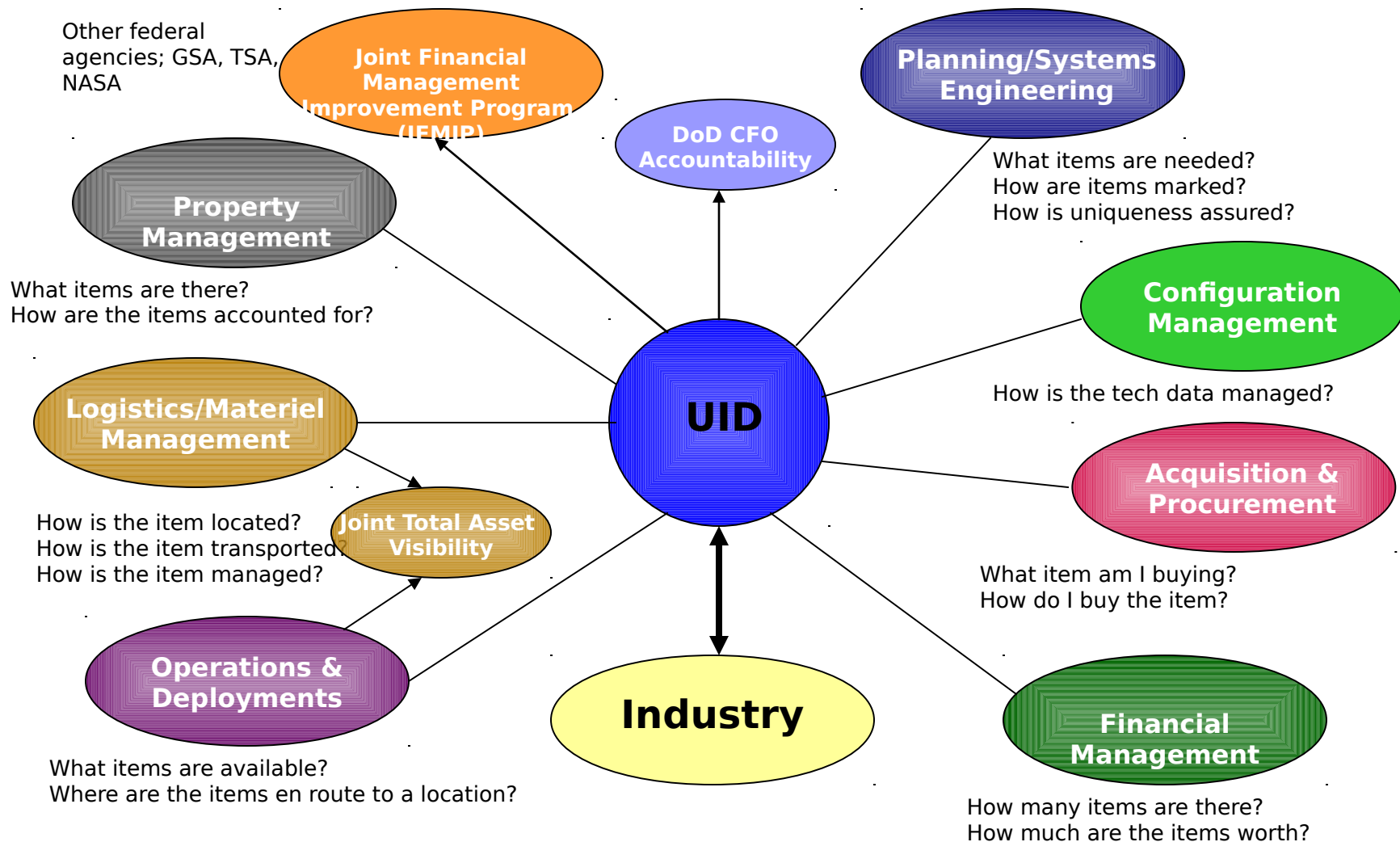
- Until SC 31 assigns “xx” format code for use of TEIs use interim DoD format code “DD” in ISO/IEC 15434 syntax:

[>^R_SDD^G_SEUC370521^G_SPNO1234^G_SSEQ786950^E_OT

UID in the Supply Chain

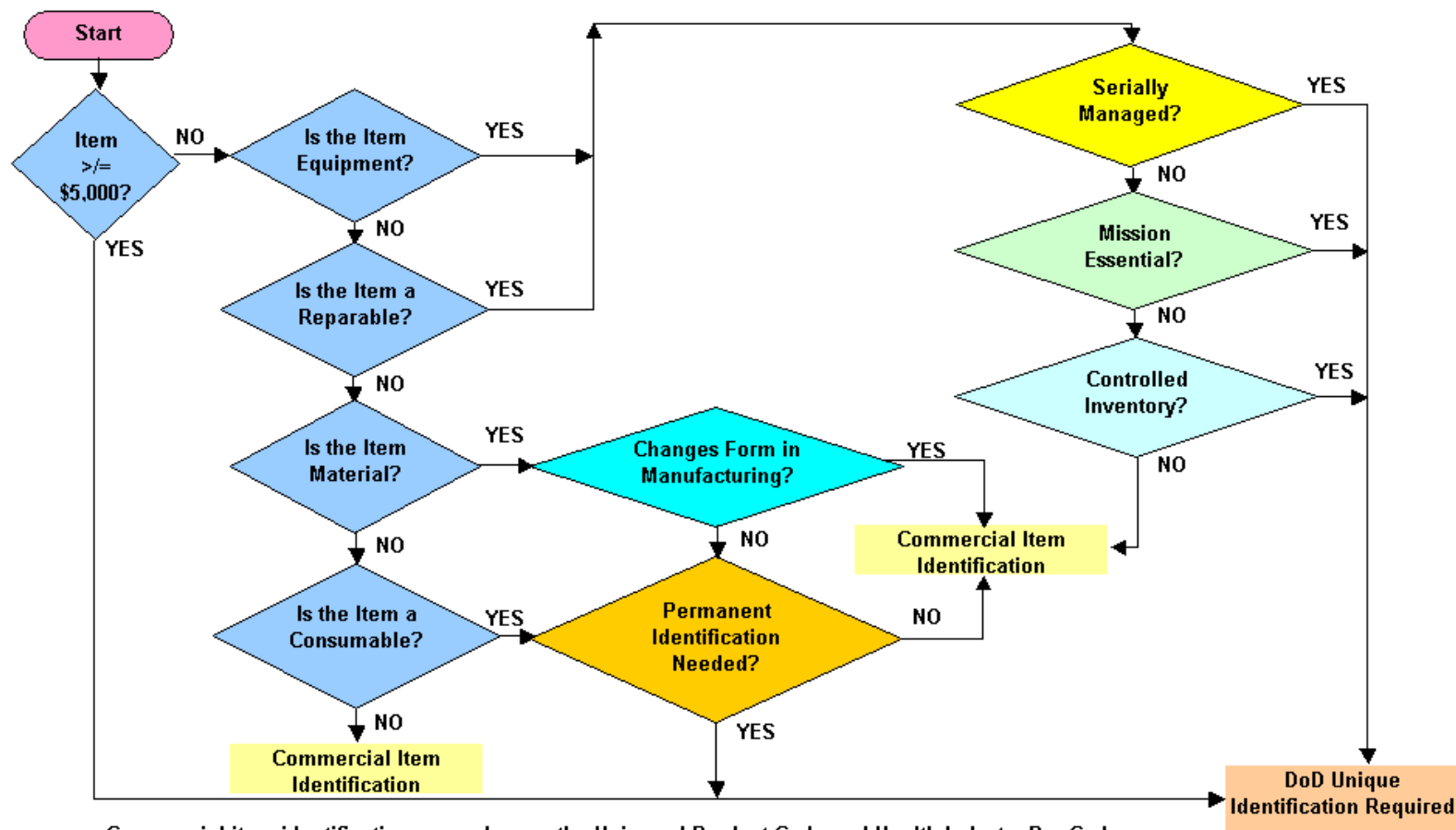


UID Interfaces

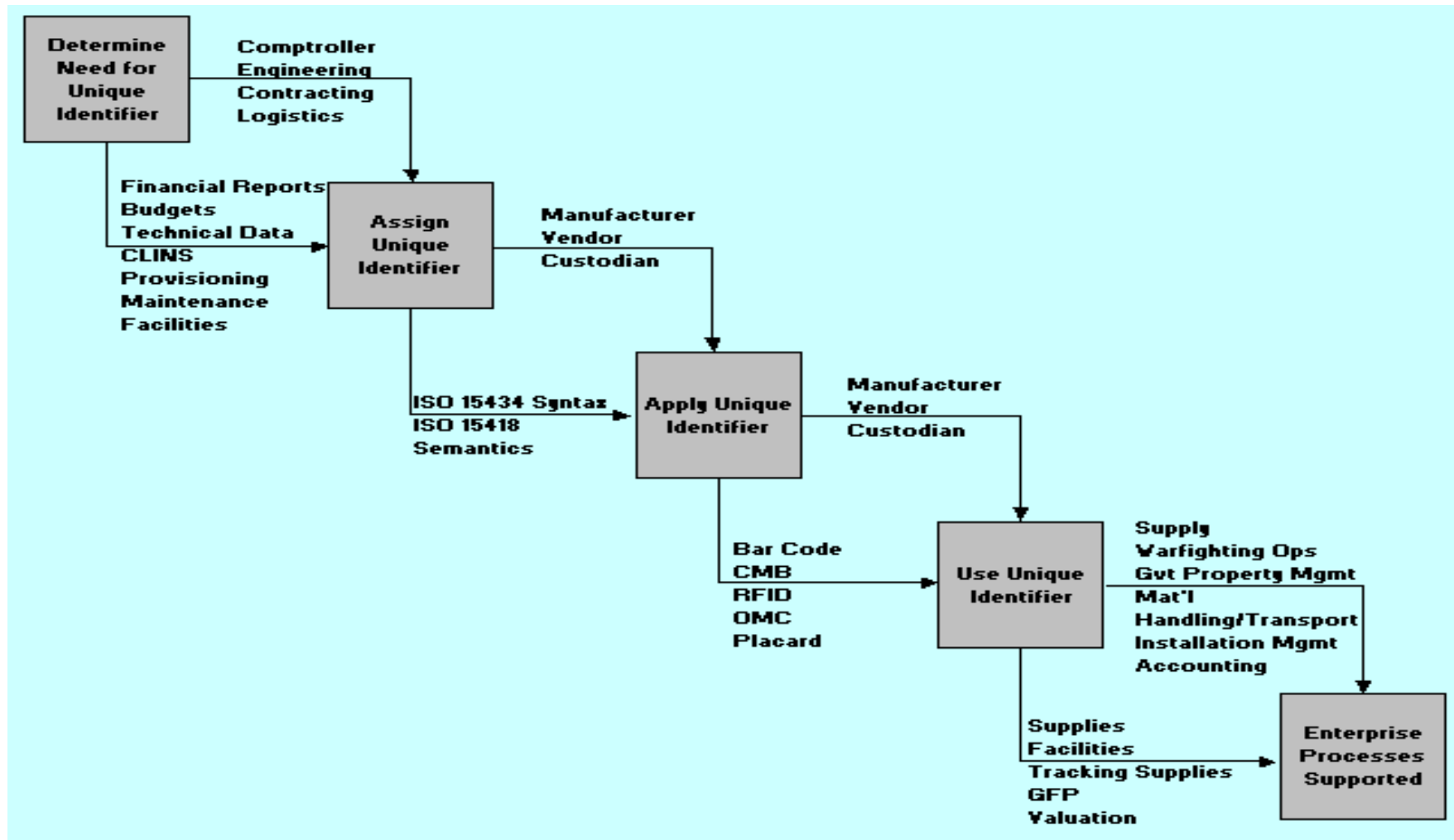


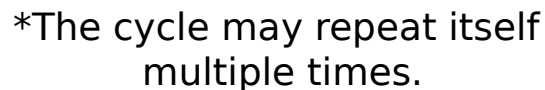
Require the UID

Which Items Require a Unique Identifier



UID Interface Flow





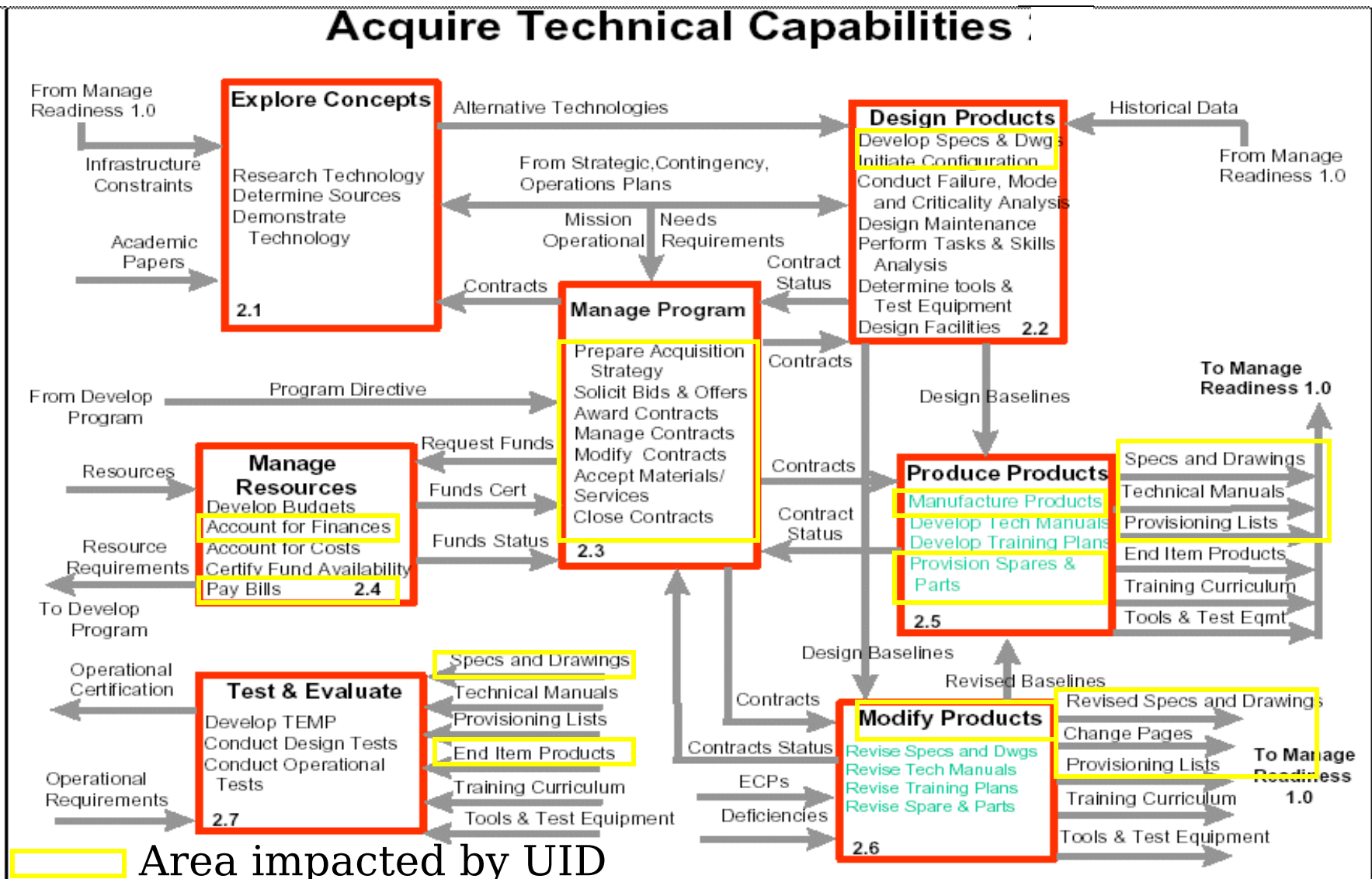
UID - Use Cases

- Failure Reporting/Analysis & Targeted Repair (Reactive and Proactive)
- Recall (targeted versus global)
- Maximizing Capability While Minimizing Logistics
 - Reliability studies to determine best equipment available
 - Tracking and redirecting as necessary in route
- Planned Maintenance
- Repair, Modification and Upgrade
- Supplier Performance
 - Parts (end items and spares)

- ◆ Linkage from Initial Requirement to Item
 - UID linkage to Contract/Line Items Through UID Registry
 - Line Items linked to Engineering Documentation
 - Engineering documentation and UID linkage through CM rules or document constructs (e.g., drawing number could be constructed using EID + Part Number)
- ◆ Improved Supply Chain Traceability
 - Requirements flow-down to suppliers
 - Suppliers follow UID constructs
 - End-to-end visibility from least item with UID to item performance

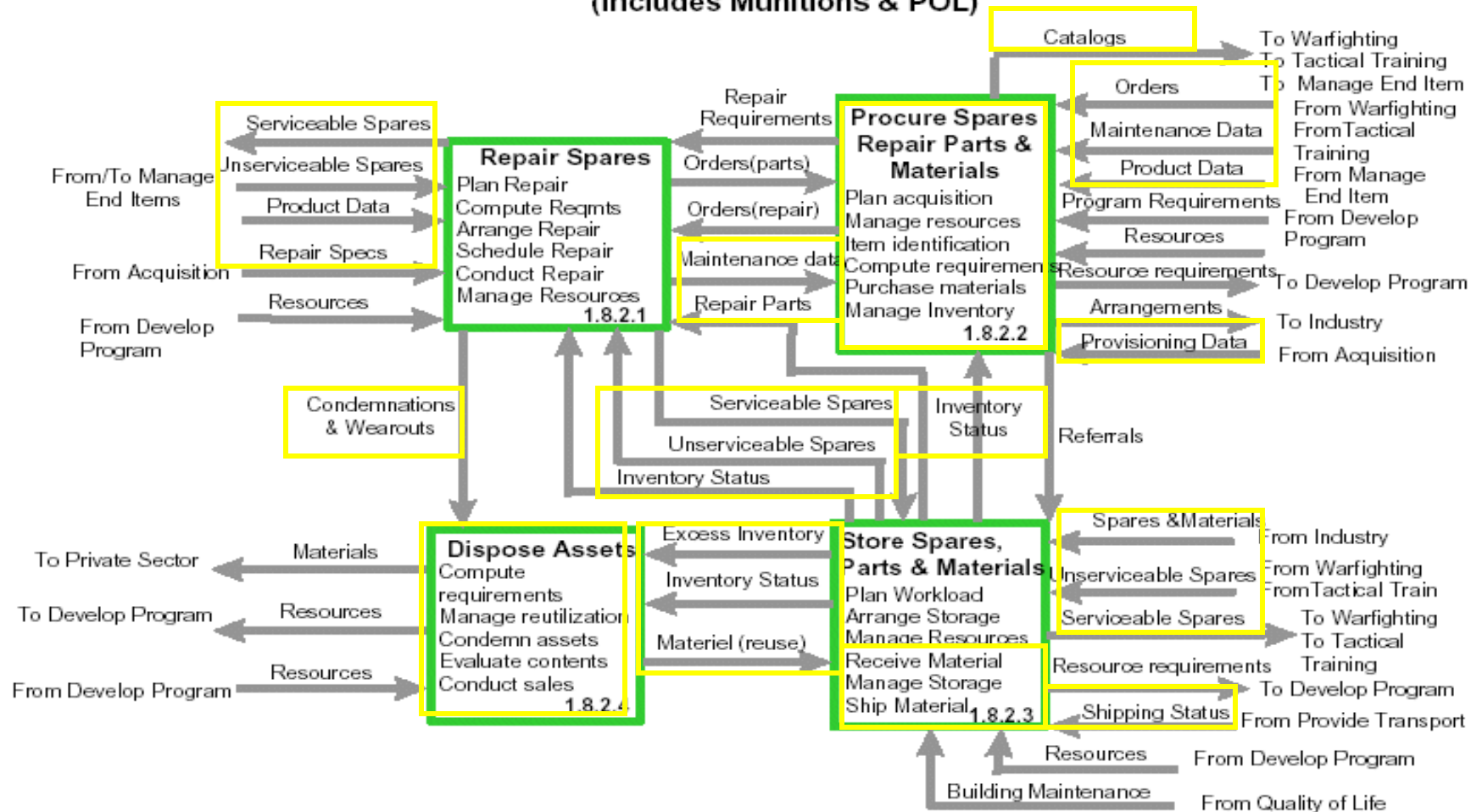
UID in the DoD Process Model

Acquire Technical Capabilities



UID in the DoD Process Model

Acquire Material (Includes Munitions & POL)



Area impacted by UID

Logistics Outcomes

- ◆ Comprehensive, timely data about each uniquely identified item throughout the supply chain
 - Generation, collection and analysis of maintenance data
 - End-to-end tracking and traceability of unique items
 - Reliability and maintainability information on each item throughout its life cycle
- ◆ Improved supply chain efficiency
 - Administrative cost reduction
 - Reduced stock levels
 - Simplicity, standardization, speed and certainty in automated data capture and electronic information exchange
- ◆ Integrated transportation/ movement of individually identified items (i.e. greater in-transit visibility)

Figure 1-10. Logistics Support Functions

Plan Acquisition (1.8.2.2.1)
 Determine Capital Resources
 Plan workload
 Determine Organization
 Size and Structure

Compute Requirements (1.8.2.2.4)
 Validate Input Data
 Compute Demand Rates
 Compute Return Rates
 Forecast Demands/Returns
 Compute Levels
 Apply Assets
 Execute Supply Actions
 Develop Stratification
 Prepare Budget Input

Purchase Materials (1.8.2.2.5)
 Select Sources
 Prepare Tech Data
 Solicit Bids & Offers
 Award Contracts
 Issue Orders
 Monitor Orders
 Accept Materials/ Services
 Close Contracts

Identify Spares / Repair Parts (1.8.2.2.3)
 Screen Parts Lists
 Assign Item Manager
 Establish Manage Method
 Establish Acq Method
 Establish Application Data
 Determine Initial Spares
 Develop Item Description

Manage Inventory (1.8.2.2.6)
 Process Receipts
 Position/ Inventories
 Perform Inventory Accounting
 Direct Issues/ Redistribution
 Process Requisitions
 Process Programmed Issues
 Manage GFE/GFM

Manage Resources (1.8.2.2.2)
 Develop Budgets
 Account for Finances
 Account for Costs
 Certify Fund Availability
 Pay Bills

Legend:
 Yellow box: Area impacted by UID

Inputs and Outputs:
 - **Plan Acquisition:** From Develop Program Program Requirements; To Develop Program Program Requirements; Capital Resource Requirements; From Maintain End Item/Repair Spares Program Requirements; From Develop Program Resources; Resource Requirements; To Develop Program.
 - **Compute Requirements:** Maintenance data; From Develop Program Requirements; Budget Constraint; Purchase Requests; From Develop Program Program Requirements; Contract Status; From Produce Products; Request for GFE/ GFM.
 - **Purchase Materials:** Funds Status; Certify Funds; Request Funds; To Develop Program; To Maintain End Item/Repair Spares; To Store Spares & Repair Parts; Release Orders; Stock Positioning; Material Orders; Order Status.
 - **Identify Spares / Repair Parts:** Provisioning Data; From Produce Products; Catalogs; To Warfighting Tactical Training Maintain End Item; Initial Spares Requirements; Repair Orders; To Repair Spares; Demand History; Inventory Status; Item Mgmt Data.
 - **Manage Inventory:** Inventory Status; Demand History; Disposal Directive; From Maintain End Item/Repair Spares; Material Orders; Order Status; To Maintain End Item/Repair Spares; To Store Spares & Repair Parts; Release Orders; Stock Positioning; Material Orders; Order Status.
 - **Manage Resources:** From Develop Program Resources; Resource Requirements; To Develop Program; From Maintain End Item/Repair Spares Program Requirements; From Develop Program Requirements; Budget Constraint; Purchase Requests; From Develop Program Program Requirements; Contract Status; From Produce Products; Request for GFE/ GFM.

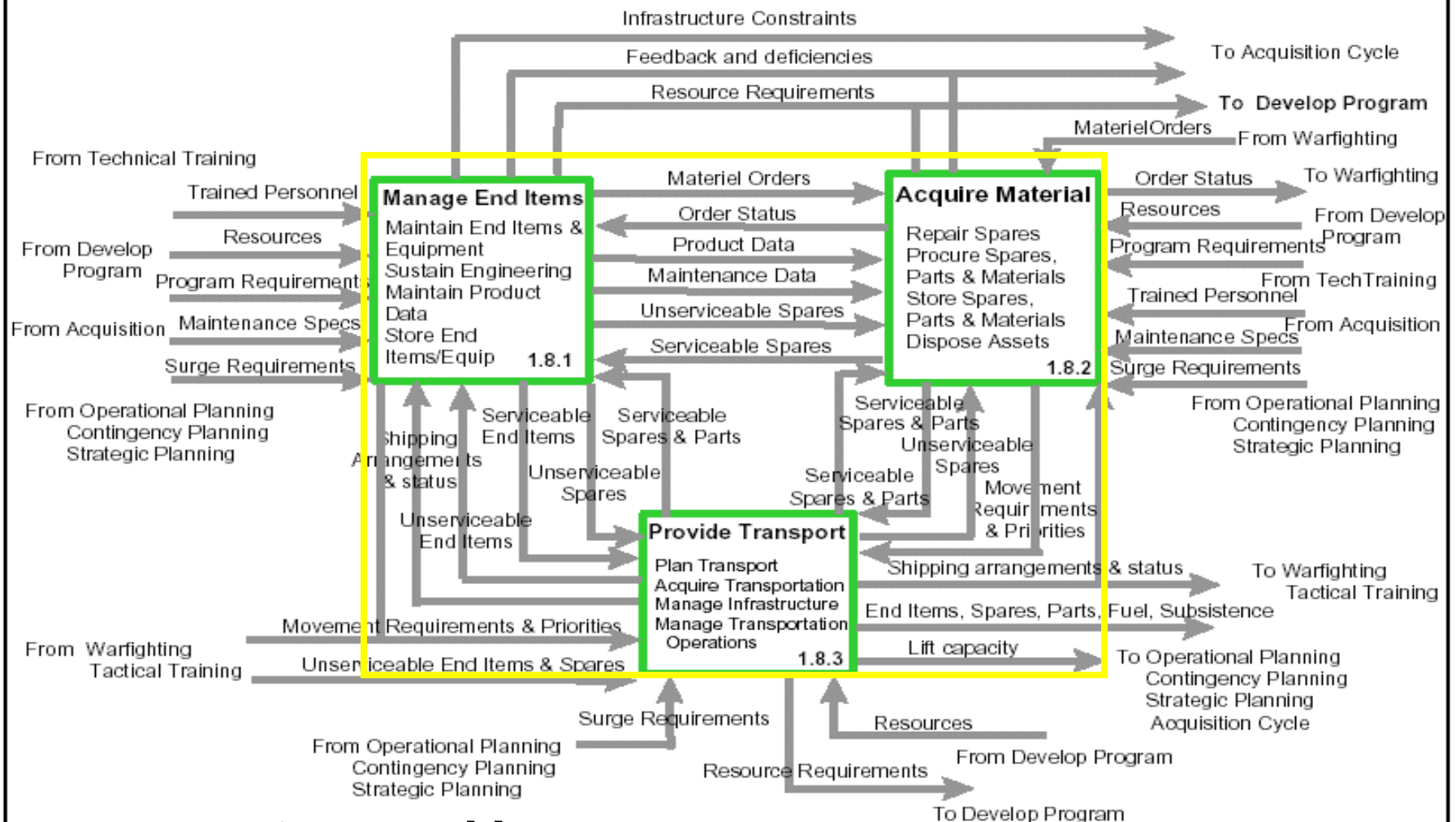
 Area impacted by UID

Warfighter Impacts

- ◆ Better information:
 - Maintenance history including:
 - Reliability records
 - Exact configuration
 - Enhanced predictive capability for improved sparing
 - Comprehensive, timely data about each uniquely identified item throughout the supply chain
- ◆ Integrated transportation and movement of individually identified items
 - Reallocation of support items real-time
 - Prioritization of shipments in theatre

UID in the DoD Process Model

Provide Force Structure Support



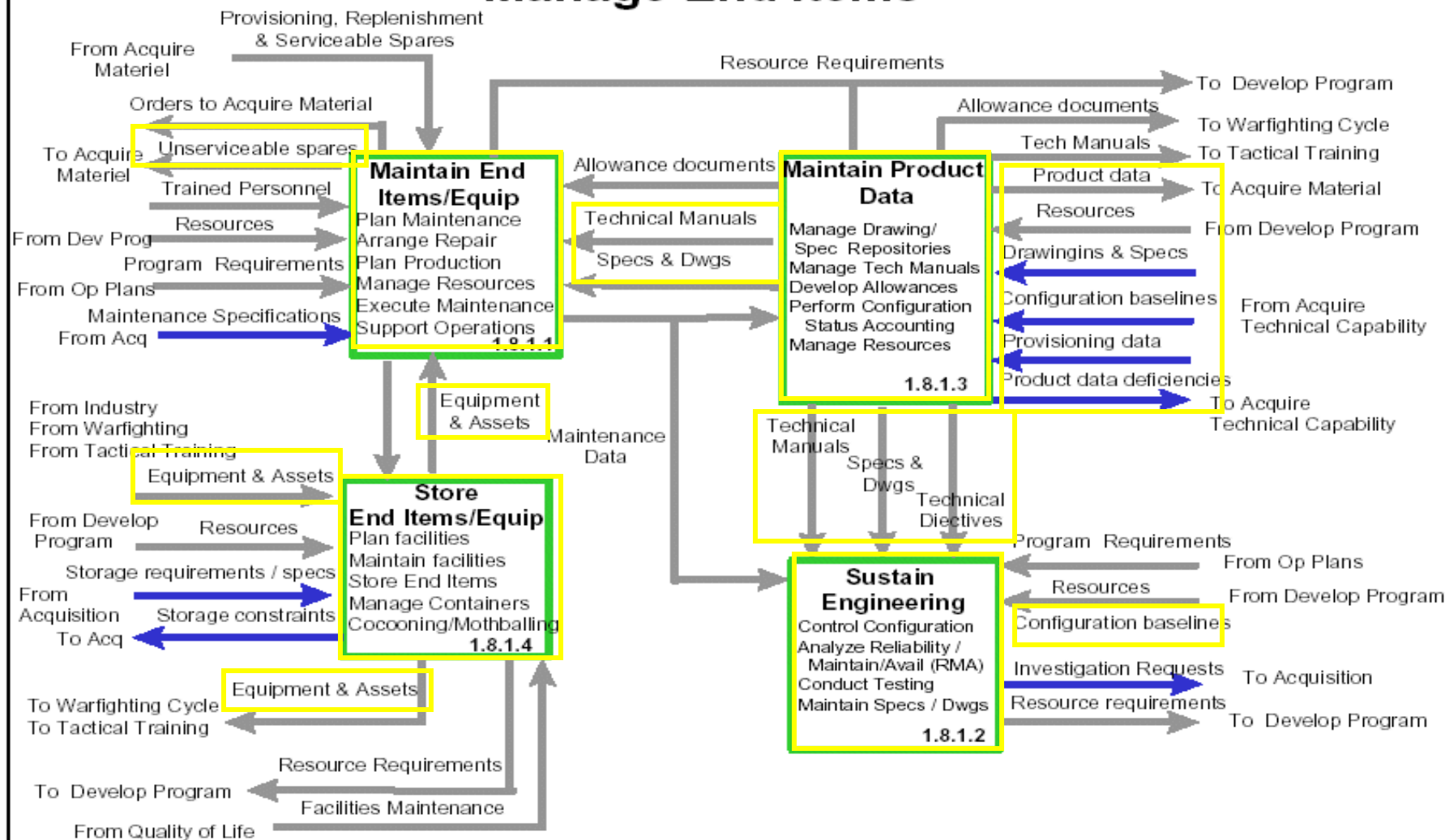
Area impacted by UID

Reprocurement and Sparing

- ◆ Better linkage to actual performance across platforms
 - Supplier and item performance
 - Government evaluation of prime
 - Prime evaluation of suppliers
 - Use history across platforms provides horizontal insight into improving performance
- ◆ Integrated transportation and movement of individually identified items
 - Targeted sparing based on UIDs fielded to unit
 - Reallocation of support items real-time

UID in the DoD Process Model

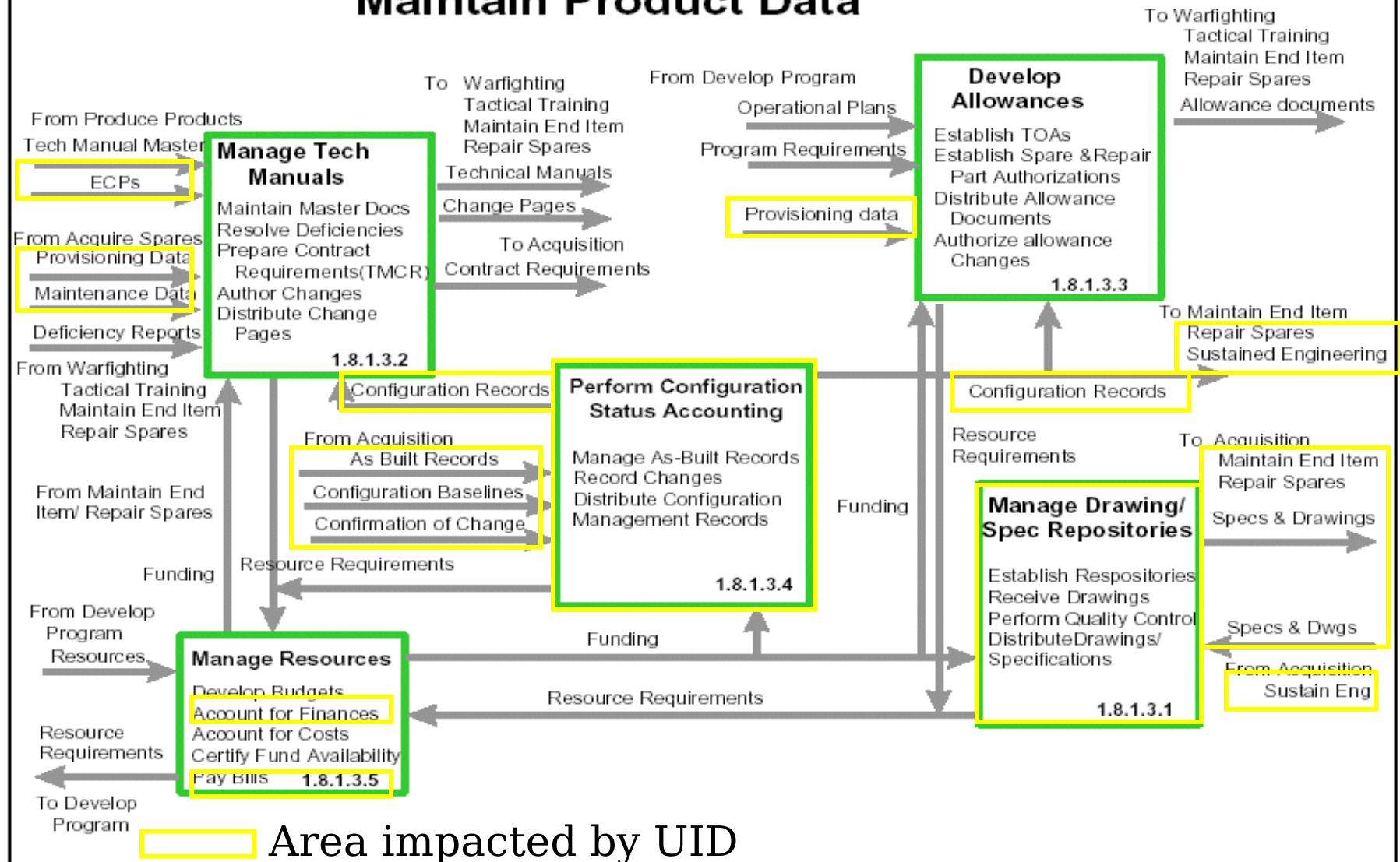
Manage End Items



 Area impacted by UID

UID in the DoD Process Model

Maintain Product Data





Technical Documents That Impact Unique Identification

Process	Document
Configuration Management	EIA-649, National Consensus Standard for Configuration Management, 07-10-98*
Configuration Management	MIL HDBK 61A(SE), Configuration Management Guidance, 02-07-01
Defense Specifications	MIL-STD-961D, DoD Standard Practice for Defense Specifications, Chnge Notice 1, 08-22-95
Technical Documentation	MIL-DTL-31000B, Technical Data Packages, 12-14-01
Engineering Drawing Practices	ASME Y14.1000-2000, Engineering Drawing Practices, 2001*
Identification Marking	MIL-STD-130L, Identification Marking of U.S. Military Property, 10-10-03

* Adopted by DoD



Unique Item Identification and Valuation DFARS Case 2003-D081 Interim Rule

The Interim Rule contains the clause at 252.211-7003, Item Identification and Valuation. At 252.211-7003 (e)(3), it is required that the unique item identifier type be reported, along with other identifying information, in the Material Inspection and Receiving Report at the time of delivery. This clause defines "unique item identifier type" as a designator to indicate which method of uniquely identifying a part has been used. The permissible values for the unique item identifier type are as follows:

- UID1 - Unique Identification Construct 1, Serialization within the Enterprise
- UID2 - Unique Identification Construct 2, Serialization within the Original Part Number
- VIN - Vehicle Identification Number
- GRAI - EAN.UCC Global Returnable Asset Identifier
- GIAI - EAN.UCC Global Individual Asset Identifier
- OTHER - For UIDs without an assigned UID Type

Closing Thoughts

- ◆ Current UID policy focuses on the mark, but the vision is not just about putting on “the mark”
- ◆ Leveraging “the mark” through modified business practices is powerful
 - Consistency across the Enterprise
 - Visibility across systems and platforms
 - Enhanced inventory control and flexibility
- ◆ Implementation will ultimately benefit
 - Primes
 - Suppliers
 - Government Program Offices
 - Logisticians
 - Warfighters



Contact Information

For further information or questions, please contact:

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- Mr. Robert Leibrandt at Robert.L Leibrandt@osd.mil or at (703) 695-

A variety of UID background materials and previous UID policy memos can be found at

www.uniqueid.org

Note: For inquiries regarding the standards effort, please contact Lt Col Gregory Redick at gregory.redick@dcma.mil

Backup Slides



MIL-STD-130K

(Changes completed and reflected in 130L)

Item Identification

- Defines item identification as the combination of the part or identifying number and the original design activity CAGE code.
- Defines PIN consistent with ASME Y14.100-2000.
- Defines serial number consistent with ASME Y14.100-2000.
- Requires that parts be marked with the applicable design activity CAGE, a dash(or slant), and PIN. Specifies various marking schemes for different manufacturing scenarios and equipment configurations.
- Requires that serialized or reparable items be marked with serial number, if applicable, NSN (or manufacturer's PIN), and applicable CAGE code.

MIL-STD-130K

(Changes completed and reflected in 130L)

- **Requires change to cover marking with UID Constructs #1 and #2**

	UID Construct #1	UID Construct #2
Based on current enterprise configurations	If items were serialized within the Enterprise	If items were serialized within Part Number
UID is derived by concatenating the data elements IN ORDER:	Issuing Agency Code* Enterprise ID** Serial Number**	Issuing Agency Code* Enterprise ID** Original Part Number** Serial Number**
Data Elements on Items Not Part of the UID (Separate Elements)	Current Part Number	Current Part Number
<p>*The registration authority, which shall be derived from the data qualifier for the enterprise identifier. It is not placed on the item. **UID data elements placed on the item.</p>		